



High frequency of HLA class I antigen processing machinery (APM) component upregulation in primary hepatocellular carcinoma tumors

Citation

Grizzi, Fabio, Barbara Franceschini, Sonia Di Biccari, Paola Bossi, Maurizio Chiriva-Internati, and Soldano Ferrone. 2013. "High frequency of HLA class I antigen processing machinery (APM) component upregulation in primary hepatocellular carcinoma tumors." *Journal for Immunotherapy of Cancer* 1 (Suppl 1): P264. doi:10.1186/2051-1426-1-S1-P264. <http://dx.doi.org/10.1186/2051-1426-1-S1-P264>.

Published Version

doi:10.1186/2051-1426-1-S1-P264

Permanent link

<http://nrs.harvard.edu/urn-3:HUL.InstRepos:12407009>

Terms of Use

This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at <http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA>

Share Your Story

The Harvard community has made this article openly available.
Please share how this access benefits you. [Submit a story](#).

[Accessibility](#)

POSTER PRESENTATION

Open Access

High frequency of HLA class I antigen processing machinery (APM) component upregulation in primary hepatocellular carcinoma tumors

Fabio Grizzi^{1*}, Barbara Franceschini², Sonia Di Biccari², Paola Bossi³, Maurizio Chiriva-Internati⁴, Soldano Ferrone⁵

From Society for Immunotherapy of Cancer 28th Annual Meeting
National Harbor, MD, USA. 8-10 November 2013

Malignant transformation of cells is associated with downregulation of HLA class I APM components in most of the tumors. These defects are clinically relevant, since they are frequently associated with the clinical course of the disease. Only in a few tumors malignancy is associated with the upregulation of HLA class I antigens. Among them is hepatocellular carcinoma (HCC). The frequency of HLA class I APM component upregulation and its clinical significance in HCC are not known. These topics were investigated in the present study, since the resulting information may contribute to assess the therapeutic efficacy of T cell-based immunotherapy for the treatment of HCC. Twenty-one surgically resected primary HCC tumors and autologous adjacent non-malignant tissues were stained with a unique panel of monoclonal antibodies which recognize HLA class I APM components. The staining patterns of the malignant tumors were compared to those of the autologous non malignant tissues. To assess the functional significance of changes in HLA class I APM component expression in HCC tumors, the results of immunohistochemical staining were correlated with the extent of CD8+ cytotoxic T-lymphocyte infiltrate, quantified with a computer-aided image analysis system. In all the HCC tumors, malignant hepatocytes expressed high levels of HLA class I APM components. In contrast these molecules were not detected in normal hepatocytes, although they displayed a low expression in some apparently normal hepatocytes adjacent to the HCC tumor. The HLA class I APM component upregulation in HCC was associated with the extent of CD8+ T cell infiltrate, although this association did not reach the level of

statistical significance. Our results corroborate the information in the literature about the lack of HLA class I antigen expression in hepatocytes. Furthermore our study shows for the first time that APM components are also not detectable in normal hepatocytes. Lastly our study shows that HLA class I APM component upregulation is very frequent in HCC. Its association with T cell infiltrate, although not statistically significant, is compatible with the possibility that HCC cells are recognized by CD8+ T cells. If so, HCC should represent an attractive target to apply T cell-based immunotherapy.

Authors' details

¹Laboratory of Molecular Gastroenterology, Humanitas Clinical and Research Center, Rozzano, Italy. ²Laboratory of Quantitative Medicine, Humanitas Clinical and Research Center, Rozzano, Italy. ³Department of Pathology, Humanitas Clinical and Research Center, Rozzano, Italy. ⁴Department of Internal Medicine, Texas Tech University Health Science Center Medical School, Lubbock, TX, USA. ⁵Department of Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA.

Published: 7 November 2013

doi:10.1186/2051-1426-1-S1-P264

Cite this article as: Grizzi et al.: High frequency of HLA class I antigen processing machinery (APM) component upregulation in primary hepatocellular carcinoma tumors. *Journal for ImmunoTherapy of Cancer* 2013 **1**(Suppl 1):P264.

¹Laboratory of Molecular Gastroenterology, Humanitas Clinical and Research Center, Rozzano, Italy

Full list of author information is available at the end of the article